

## **REMARKS**

The above amendments to the above-captioned application along with the following remarks are being submitted as a full and complete response to the Official Action dated April 4, 2007. In view of the above amendments and the following remarks, the Examiner is respectfully requested to give due reconsideration to this application, to indicate the allowability of the claims, and to pass this case to issue.

### **Status of the Claims**

Claims 4-13 are under consideration in this application. Claims 1-3 are being cancelled without prejudice or disclaimer. Claims 4-6, 11 and 13 are being amended, as set forth above and in the attached marked-up presentation of the claim amendments, in order to more particularly define and distinctly claim Applicants' invention.

All the amendments to the claims are supported by the specification, especially the drawings. Applicants hereby submit that no new matter is being introduced into the application through the submission of this response.

### **Formality Rejection**

Claims 1-2 were objected to for informalities, and claim 3 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite. The claims are being amended according to the Examiner's requirements and then incorporated in claims 4-6 accordingly. Accordingly, the withdrawal of the outstanding informality rejection is in order, and is therefore respectfully solicited.

### **Prior Art Rejection**

Claims 1-13 were rejected under 35 U.S.C. §103 (a) as being unpatentable over US 7,020,162 to Iwasaki et al. (hereinafter "Iwasaki") in view of US 2002/0162029 of Allen et al. (hereinafter "Allen"). This rejection has been carefully considered, but is most respectfully traversed in view of the claims currently on file, as more fully discussed below.

The packet communicating system of the present invention (for example, the embodiment depicted in Fig. 8), as now recited in claim 4, comprises: an optical line termination (OLT) 10 for subsidiarily connecting optical network units (ONUs) 12 by the Passive Optical Network type (PON), said OLT 10 having a function for terminating the physical layer of the PON and controlling bandwidths in physical lines between the OLT 10 and the ONUs 12; and a broadband access server (BAS) 28 connected to said OLT 10, said

BAS having a function for authorizing users communicating with the Internet, via the ONUs 12 and the OLT 10. The BAS 28 has a function for controlling said OLT system through a special physical line to the OLT 10 provided in the BAS 28 for controlling, using information of the users obtained from a Remote Authentication Dial In User Service (RADIUS) server 26 managing information of the users when authorizing the users. The BAS 28 is provided with a special physical line to OLT 10 for system control, and having a function for sending and receiving packets for controlling user bandwidths, and setting bandwidths *per user* for the users to send and receive packets (e.g., a user bandwidth control table in Fig. 13), through said special physical line.

Claims 5-6 and 13 recite the same broadband access server (BAS) 28.

The present invention enables bandwidth control per user for users under the ONUs. The BAS uses a user profile obtained during the authorization to perform bandwidth control of the PON. PPP is used for authorization between users and the BAS, and bandwidth control is achieved by passing bandwidth information of each user obtained from the RADIUS server to the OLT. The OLT uses session ID of PPPoE to identify user data. This is created when a session between the BAS and a user is established. User packets are buffered and shaped every session ID to achieve bandwidth control on a user basis (p. 6, lines 5-13). With bandwidth control on an ONU basis, appropriate bandwidths can be allocated by summing the bandwidths of users accommodated in each ONU on the basis of the number of users and user bandwidths obtained by BAS user authorization. With bandwidth control on a user basis, bandwidths assigned to users under ONUs can be allocated (p. 29, lines 7-13).

Applicants respectfully contend that none of the cited references teach such a “broadband access server (BAS) 28 provided with a special physical line to OLT 10 for system control, and having a function for sending and receiving packets for controlling user bandwidths, and setting bandwidths *per user* for the users to send and receive packets, through said special physical line” as the present invention.

As admitted by the Examiner (p. 4, lines 12-17 of the outstanding Office Action), Iwasaki does not teach the broadband access server (BAS) of the present invention. Allen was relied upon by the Examiner to provide such teachings.

In addition, Iwasaki's bandwidth controller only apportions the plurality of ONUs between the first optical network and the second optical network, and assigns a predetermined transmission bandwidth to each of the plurality of ONUs (Abstract). Iwasaki merely allocates bandwidths per ONU, but not per user of ONUs.

Contrary to the Examiner's assertion (p. 7, 3<sup>rd</sup> paragraph of the outstanding Office

Action) that “*Allen et al. disclose the limitation of the packet communicating system ... setting bandwidths for the users to send and receive packets, through said special physical line (page 1, paragraph [0005])*,” Allen does not mention the term “bandwidth” once in the whole specification, much less about a broadband access server (BAS) controlling bandwidth per user for users under the ONUs.

Applicants contend that the cited references and their combinations all fail to teach or suggest each and every feature of the present invention as recited in independent claims 4-6 and 13. As such, the present invention as now claimed is distinguishable and thereby allowable over the rejections raised in the Office Action. The withdrawal of the outstanding prior art rejections is in order, and is respectfully solicited.

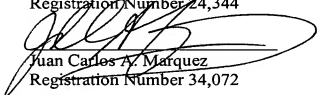
### Conclusion

In view of all the above, clear and distinct differences as discussed exist between the present invention as now claimed and the prior art reference upon which the rejections in the Office Action rely, Applicants respectfully contend that the prior art references cannot anticipate the present invention or render the present invention obvious. Rather, the present invention as a whole is distinguishable, and thereby allowable over the prior art.

Favorable reconsideration of this application is respectfully solicited. Should there be any outstanding issues requiring discussion that would further the prosecution and allowance of the above-captioned application, the Examiner is invited to contact the Applicants' undersigned representative at the address and phone number indicated below.

Respectfully submitted,

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